

## LESSON 8: ETHI-REASONING—EXOTIC INVASIVE PLANT SPECIES TOPICS

NOTE: This lesson was developed by Project Wild (<http://www.projectwild.org/index.htm>) for their ethi-reasoning and ethi-thinking activities. It has been adapted for incorporation into this curriculum.

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**Duration:** One 45-minute class period

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**Background information:**

An open discussion of personal opinion in the classroom entreats student preparation. An atmosphere of effective communication, in which students are comfortable expressing their ideas appropriately, involves various interactive skills:

- ☐ *Active listening* shows interest in others, and in what they are saying.
- ☐ *Constructive Feedback* allows one's teammate(s) to know how they are doing.
- ☐ *Responsibilities of each team member* to team success:
  - *contribute/stay involved*
  - *take turns speaking*
  - *offer positive comments/assistance*
  - *focus on the issue*, not the person speaking
  - *support your opinion* with factual information
- ☐ *Freedoms* inherent in discussing opinions
  - everyone has an individual opinion/viewpoint
  - may express an opinion without fear of ridicule
  - may express an opinion respectfully
  - may respond to others' opinions respectfully
  - may agree to disagree

A *collaborative atmosphere* helps fulfill students' needs to feel safe in making mistakes, and exploring possible solutions. Clear expectations replace barriers to effective communication. Development of a non-threatening working relationship is critical to the success of a discussion involving opinions or ethics such as the one in this valuable activity.

Source: *Effective Communication in Schools*, online at <  
<http://para.unl.edu/para/Communication/Intro.html>>

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**Objectives:**

Students will clarify their own values related to exotic invasive species and hear the values of others.

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**Prepare in advance:**

Copy Handout 1—Ethi-Reasoning Scenarios—for each student

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**Description:**

The purpose of this lesson is to give students the opportunity to examine, express, and clarify their own opinions and reasoning.

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**Instructional sequence:**

(10 minutes)

- **Review** the difference between OPINION and FACT with the students.
- **Instruct** students that this is an opportunity for them to reflect on what they believe about some exotic invasive species issues. Everyone will have a chance to voice their opinions on each issue. Common ground may or may not be reached. Participants may have to “agree to disagree.”

(5-10 minutes)

- **Hand out** a short exotic invasive species scenario to the students.
- **Give** students time to read the scenario.

(5-10 minutes)

- **Divide** class into small groups for discussion. If students are reticent to speak, **begin** the discussion with a question:
  - What is the main problem you see in this scenario?
  - Which solution do you like best? Why?

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**Optional assessment task:**

After two scenario discussions, have students write a personal opinion paragraph about a new, third scenario.

After three scenario discussions, have students write an opinion paragraph to express the personal values they have (and/or have not) expressed in discussion.

## Foul Forage

Long ago, large numbers of deer and elk roamed the Southern Appalachian Region. They rarely had problems finding food. Both elk and deer chose to eat only certain plants. They roamed over a very large range.

White-tailed deer like open meadows and forest glades near dense woods and thickets. Forest edges, orchards, and farmland usually provide excellent habitat.<sup>1</sup> White-tailed deer are picky vegetarians. They choose the healthiest forage they can find each season. During the spring and summer, they eat leaves, twigs, mushrooms, fruits, grasses, honeysuckle, and tree seedlings. White tailed deer eat mostly acorns and other seeds in the fall.

Elk usually go to high, open mountain pastures in summer and move to lower, dense woods in winter. They graze mostly in spring and summer. Elk like to eat grasses and low-growing flowers (forbs). Sometimes they feed on small trees and shrubs in winter if they cannot find grasses and forbs. Elk also eat lichens.<sup>1</sup>

The amount of forage for white tailed deer and elk changed when pioneers moved into the Southern Appalachians. Pioneers cut down parts of the forest to make room for their cabins. They brought along sheep for wool and meat. People kept their sheep in much smaller areas on their farms. The sheep were not as picky about what they ate as the elk and deer were.

Sheep ate the same plants year after year. The “favorite” forage of elk and deer could not produce seeds quickly. The sheep ate

faster than the plants could grow and reproduce. Many kinds of plants became hard to find in the meadows and groves.

Soon, settlers brought familiar forage plants from Europe for their sheep to graze on. The new plants grew well. Meadows and thickets were a familiar habitat. The new exotic (alien) plants could grow and reproduce faster than the native plants. This provided much needed forage for the settlers’ herds.

Exotic plants from Europe spread across the Southern Appalachian Region. *Musk thistle* (page background) is one example. It spreads faster than native meadow plants. New musk thistle seedlings can sprout and grow during warm times in late fall and early winter. Musk thistle doesn’t taste good to deer and elk. *Garlic Mustard* is another example. One garlic mustard plant can quickly replace native plants growing in an area. Originally from Europe, a single plant can enter an area, quickly replace the existing vegetation, and plant a seed bank that lasts from five to 10 years. Some native plants like *white trillium*, *Jacob’s ladder* and other forbs have a hard time growing because of garlic mustard.

### Should you:

- **Write a report blaming the pioneers for bringing exotic plants into the Southern Appalachian Region.**
- **Ignore the problem because it started long ago.**
- **Help to restore the ecosystem by joining a weed-pull team.**
- **Donate money to restore elk to the Smoky Mountains.**
- **Other?**

## Backyard Blunder

Mr. Simpson finally finished fixing the backyard landscape. For years, the view was not very pleasant. At last he hid the neighbors' huge, red propane gas tank.

Mr. Simpson was especially excited. He planted three lush, flowering shrubs while Mrs. Simpson visited her mother in Texas. He just knew she would be thrilled to find the new, sweet-smelling backyard plants. The shrubs were blooming. Lovely butterflies were enjoying the flowers' delicious nectar.

Mrs. Simpson was indeed surprised when she arrived home. It was so nice to look out back and *not* see that big, ugly, red tank! She and Mr. Simpson walked over to admire their new landscape. The aroma of the flowering shrubs was inviting. What a surprise she got when she saw the kind of shrub her husband had worked so hard to plant. It was *Bush Honeysuckle*!

Mrs. Simpson knew her husband labored to prepare the rocky, red clay soil. She knew he spent all day Saturday planting those large bushes. She also knew bush honeysuckle was one of the worst exotic pest plants in western North Carolina! She knew it could quickly spread throughout the neighborhood. She had to tell him. They would decide together what to do next.

### They should:

- ☐ Take out the bush honeysuckle.
- ☐ Talk to the neighbor about moving the propane tank.
- ☐ Leave the bush honeysuckle where Mr. Simpson planted it.
- ☐ Other?



## Wretched Winding Weed

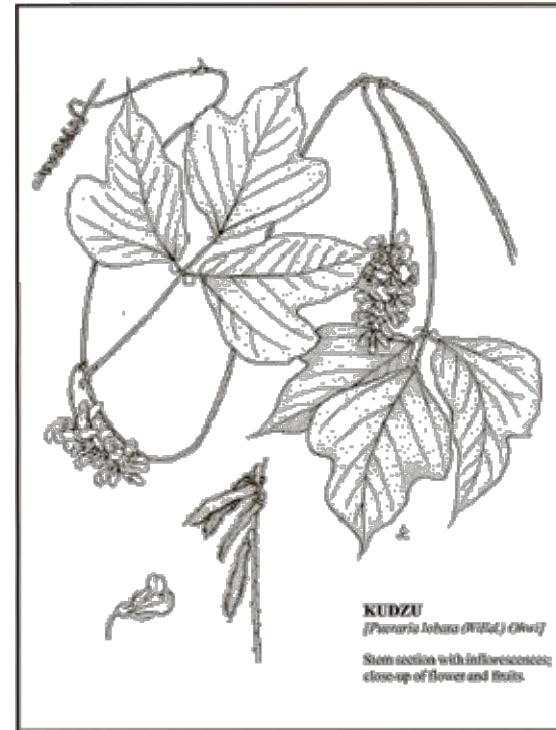
Kudzu has been called “the plant that ate the south”. This vine grows up to *one foot a day* and can cover everything in its path. Kudzu belongs to the Pea or Bean family. It has become very destructive in the South. Kudzu vines have pulled down power poles, collapsed buildings, and killed trees. A cold winter will kill young leaves and vines back to the root joints. But the vine starts growing again in spring. Freeze and frost does not kill vines that are ½ inch thick and larger. Kudzu also survives very well through drought and hot temperatures.

Only older vines that climb above the ground in full sun will flower. Few flowers make seeds that will sprout. The few healthy seeds may be how the weed has traveled such long distances. It is possible the seed pods fall into streams and rivers. The pods float downstream and begin to grow new vines.

Under good growing conditions, kudzu can grow a mass of vines impossible to walk through. This thick, heavy covering chokes out native plants that provide food and habitat for native animals. The result is a major change of living communities.

Kudzu was originally imported from Japan in 1876 to landscape a garden. In the early 1900’s, this vine was discovered to be excellent forage for cows, pigs, and goats in the South’s acidic soils during dry seasons. It was also advertised to stop soil erosion. By 1953 the United States Department of Agriculture (USDA)

removed kudzu from its list of groundcover plants, because the soil continued to erode underneath the vines.



### How should kudzu be controlled today?

- Use kudzu as grazing forage for livestock.
- Spray all areas with kudzu growing in them with diazinon (a highly toxic herbicide) from a crop-duster airplane.
- Develop a gourmet kudzu cookbook.
- Only let professional landscapers plant kudzu.
- Hire people to cut kudzu down and dig it out.